

FORM PTO-1449 (Modified) LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)			Attorney Docket No.: <u>02-020522US</u> Applicant: <u>Stemmer et al.</u> Filing Date: <u>March 25, 1996</u>		Application No.: <u>08/621,833</u> <u>unassigned</u> Group: <u>1634</u>	
Reference Designation			U.S. PATENT DOCUMENTS			Page: <u>1</u>
Examiner Initial	Document No.	Date	Name	Class	Sub-class	Filing Date (If Appropriate)
<u>AA</u>	<u>5,830,721</u>	<u>11/03/98</u>	<u>Stemmer et al.</u>			
<u>AB</u>	<u>5,811,238</u>	<u>09/22/98</u>	<u>Stemmer et al.</u>			
<u>AC</u>	<u>5,763,192</u>	<u>06/09/98</u>	<u>Kauffman et al.</u>			
<u>AD</u>	<u>5,723,323</u>	<u>03/03/98</u>	<u>Kauffman et al.</u>			
<u>AE</u>	<u>5,814,476</u>	<u>09/29/98</u>	<u>Kauffman et al.</u>			
<u>AF</u>	<u>5,817,483</u>	<u>10/06/98</u>	<u>Kauffman et al.</u>			
<u>AG</u>	<u>5,824,514</u>	<u>10/20/98</u>	<u>Kauffman et al.</u>			
<u>AH</u>						
<u>AI</u>						
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<u>AN</u>						
<u>AO</u>						
<u>AP</u>						
FOREIGN PATENT DOCUMENTS						
	Document No.	Date	Country	Class	Sub-class	Translation (Yes/No)
OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)						
EXAMINER <u>[Signature]</u>	DATE CONSIDERED <u>12/11/03</u>					

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

COPY FROM PARENT

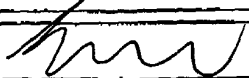
(Modified) PTO/SB/08A-B (10-96)
Approved for use through 10/31/99. OMB 0651-0031

Substitute for form 1449A-B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT COPY FROM PARENT (use as many sheets as necessary)	Complete if Known		
	Application Number	08/717440 09/954,692	
	Filing Date	November 18, 2000 09/12/2001	
	First Named Inventor	Phillip A. Patten	
	Group Art Unit	Unassigned	
	Examiner Name	Unassigned	
		Attorney Docket Number	02-02052005 02-02052005

U.S. PATENT DOCUMENTS						
Examiner Initials	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code (if known)			
	AA	6,096,548		Stemmer	08-01-2000	
	AB	6,117,679		Stemmer	09-12-2000	
	AC	6,132,970		Stemmer	10-17-2000	

FOREIGN PATENT DOCUMENTS								
Examiner Initials	Cite No.	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T
		Office	Number	Kind Code (if known)				
	AD	WO	98/42832		Cal Tech	10-01-1998		
	AE	WO	98/41653		Novo Nordisk	09-24-1998		
	AF	WO	99/29902		Cal Tech	06-17-1999		

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T
	AG	CARTER, "Improved Oligonucleotide-Directed Mutagenesis Using M13 Vectors," <u>Methods in Enzymology</u> , 154:382 (1987)	
	AH	KRAMER AND FRITZ, "Oligonucleotide-Directed Construction of Mutations via Gapped Duplex DNA," <u>Methods in Enzymology</u> , 154:350-367 (1987).	
	AI	KUNKEL, "Rapid and efficient site-specific mutagenesis without phenotypic selection," <u>PNAS</u> , 82:488-492 (Jan. 1985).	
	AJ	KUNKEL et al., "Rapid and Efficient Site-Specific Mutagenesis without Phenotypic Selection," <u>Methods in Enzymology</u> , 154:367-382 (1987).	
	AK	ZOLLER AND SMITH, "Oligonucleotide-Directed Mutagenesis: A Simple Method using Two Oligonucleotide Primers and a Single-Stranded DNA Template," <u>Methods in Enzymology</u> , 154:329 (1987).	
	AL	PRODROMOU et al., (1992) "Recursive PCR: a novel technique for total gene synthesis." <u>Protein Engineering</u> 5(8): 827-829.	
	AM	Statutory Declaration signed by Ruth Bird as filed in pending Australian opposition case, Australian Application No. 703264.	
	AN	Statutory Declaration signed by Ngaire Pettit-Young as filed in pending Australian opposition case, Australian Application No. 703264	
	AO	Statutory Declaration signed by Mae Li Gan as filed in pending Australian opposition case, Australian Application No. 703264.	

Examiner Signature		Date Considered	12/11/07
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

COPY FROM PARENT

FORM PTO-1449 (Modified)		Attorney Docket No. 18097-020500 02-020521US 001769,062 <i>unassigned</i>		Serial No.: 001769,062 <i>unassigned</i>		
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)		Applicant: PHILLIP A. PATTEN et al.				
		Filing Date: 12/18/86 <i>unassigned</i>		Group: Unknown		
Reference Designation		U.S. PATENT DOCUMENTS				
Examiner Initial	Document No.	Date	Name	Class	Sub-class	Filing Date (If Appropriate)
<i>AA</i>	3,817,837	06/18/74	Rubenstein et al.	195		
<i>AB</i>	3,850,752	11/26/74	Schuurs et al.	G01N 31	14	
<i>AC</i>	3,939,350	02/17/76	Kronick et al.	G01T 1	20	
<i>AD</i>	3,996,345	12/07/76	Ullman et al.	G01N 21	00	
<i>AE</i>	4,275,149	06/23/81	Litman et al.	B12Q 1	66	
<i>AF</i>	4,277,437	07/07/81	Maggio	G01N 33	54	
<i>AG</i>	4,366,241	12/28/82	Tom et al.	G01N 33	54	
<i>AH</i>						
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<i>AJ</i>						
<i>AK</i>						
<i>AL</i>						
FOREIGN PATENT DOCUMENTS						
	Document No.	Date	Country	Class	Sub-class	Translation (yes/no)
<i>AM</i>	WO 94/12305	06/09/94	PCT	B23B 51	00	Yes
<i>AN</i>	WO 95/11995	05/04/95	PCT	C12Q 1	68	No
<i>AO</i>						
<i>AP</i>						
<i>AQ</i>						
OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)						
<i>AR</i>	An, S. et al., "Cloning, sequencing and tissue distribution of two related G protein-coupled receptor candidates expressed prominently in human lung tissue," <u>FEBS Letts.</u> 375:121-124 (1995)					
<i>AS</i>	Andersson D.I. et al., "Muller's ratchet decreases fitness of a DNA-based microbe," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 93:906-907 (1996)					
<i>AT</i>	Barak, L.S. et al., "The Conserved Seven-Transmembrane Sequence NP(X) ₂ ,Y of the G-Protein-Coupled Receptor Superfamily Regulates Multiple Properties of the β_1 -Adrenergic Receptor," <u>Biochemistry</u> 34:15407-15414 (1995)					
<i>AU</i>	Barnes, W.M., "PCR amplification of up to 35-kb DNA with high fidelity and high yield from λ bacteriophage templates," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 91:2216-2220 (1994)					
<i>AV</i>	Barry, M.A. et al., "Toward cell-targeting gene therapy vectors: Selection of cell-binding peptides from random peptide-presenting phage libraries," <u>Nature Med.</u> 2(3):299-305 (1996)					

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FORM PTO-1449 (Modified)		Attorney Docket No. 13097-020500 <u>02-0205205</u>	Serial No.: 08/769-062 <u>unassigned</u>
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)		Applicant: PHILLIP A. PATTEN et al.	
		Filing Date: <u>12/18/96</u> <u>unassigned</u>	Group: Unknown

<input checked="" type="checkbox"/> AW	Benka, M.L. et al., "The thrombin receptor in human platelets is coupled to GTP binding protein of the G_q family," <u>FEBS Letts.</u> 363:49-52 (1995)
<input checked="" type="checkbox"/> AX	Berek, C. et al., "Mutation Drift and Repertoire Shift in the Maturation of Immune Response," <u>Immunological Reviews</u> 96:23-41 (1987)
<input checked="" type="checkbox"/> AY	Bird, R.E. et al., "Single-Chain Antigen-Binding Proteins," <u>Science</u> 242:423-426 (1988)
<input checked="" type="checkbox"/> AZ	Broach, J.R. et al., "High-throughput screening for drug discovery," <u>Nature Supp.</u> 384:14-16 (1996)
<input checked="" type="checkbox"/> BA	Cadwell, R.C. et al., "Randomization of Genes by PCR Mutagenesis," <u>PCR Methods and Applications</u> 2:28-33 (1992)
<input checked="" type="checkbox"/> BB	Cantwell, C.A. et al., "Cloning and expression of a hybrid <i>Streptomyces clavuligerus</i> cef E gene in <i>Penicillium chrysogenum</i> ," <u>Curr. Genet.</u> 17:213-221 (1990)
<input checked="" type="checkbox"/> BC	Chen, C.C.H. et al., "Structure of a Phosphonate-inhibited β -Lactamase, An Analog of the Tetrahedral Transition State/Intermediate of β -Lactam Hydrolysis," <u>J. Mol. Biol.</u> 234:165-178 (1993)
<input checked="" type="checkbox"/> BD	Chen, K. et al., "Tuning the activity of an enzyme for unusual environments; Sequential random mutagenesis of subtilisin E for catalysis in dimethylformamide," <u>Proc. Natl. Acad. Sci. U.S.A.</u> , 90:5618-5622 (1993)
<input checked="" type="checkbox"/> BE	Chong, S. et al., "Protein Splicing Involving the <i>Saccharomyces cerevisiae</i> VMA Intein," <u>J. Biol. Chem.</u> 271(36):22159-22168 (1996)
<input checked="" type="checkbox"/> BF	Courtney, L.P. et al., "An anti-IL-2 antibody increases serum half-life and improves anti-tumor efficacy of human recombinant interleukin-2," <u>Immunopharmacology</u> 28:223-232 (1994)
<input checked="" type="checkbox"/> BG	Cramer, A. et al., "Construction and evolution of antibody-phage libraries by DNA shuffling," <u>Nature Medicine</u> 2(1):100-102 (1996)
<input checked="" type="checkbox"/> BH	Cramer, A. et al., "Improved Green Fluorescent Protein by Molecular Evolution Using DNA Shuffling," <u>Nature Biotech.</u> 14:315-319 (1996)
<input checked="" type="checkbox"/> BI	Dangl, J.L. et al., "Rapid Isolation of Cloned Isotype Switch variants Using Fluorescence Activated Cell Sorting," <u>Cytometry</u> 2(6):395-401 (1982)
<input checked="" type="checkbox"/> BJ	Dierick, H. et al., "Incorporation of DITP or 7-deaza dGTP during PCR improves sequencing of the product," <u>Nucl. Acids Res.</u> 21(18):4427-4428 (1993)
<input checked="" type="checkbox"/> BK	Duncan, R. et al., "Polymer Conjugates, Pharmacokinetic Considerations for Design and Development," <u>Clin. Pharmacokinet.</u> 27(4):290-306 (1994)
<input checked="" type="checkbox"/> BL	Dunn, I.S., "Assembly of Functional Bacteriophage Lambda Virions Incorporating C-Terminal Peptide or Protein Fusions with the Major Tail Protein," <u>J. Mol. Biol.</u> 248:497-506 (1995)
<input checked="" type="checkbox"/> BM	Fish, E.N. et al., "Human Leukocyte Interferon Subtypes have Different Antiproliferative and Antiviral Activities on Human Cells," <u>Biochem. Biophys. Res. Commun.</u> 112(2):537-546 (1983)
<input checked="" type="checkbox"/> BN	Gascoigne, N.R.J. et al., "Secretion of a chimeric T-cell receptor-immunoglobulin protein," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 84:2936-2940 (1987)
<input checked="" type="checkbox"/> BO	Gates, C.M. et al., "Affinity Selective Isolation of Ligands from Peptide Libraries Through Display on a lac Repressor 'Headpiece Dimer'" <u>J. Mol. Biol.</u> 255:373-386 (1996)

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Serial No.:

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(Use several sheets if necessary)

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08/763,062 *unassigned*

Applicant: PHILLIP A. PATTEN et al.

unassigned

Filing Date: 12/18/96

Group: Unknown

BP	Gram, H. et al., "Phage display as a rapid gene expression system: production of bioactive cytokine-phage and generation of neutralizing monoclonal antibodies," <u>J. Immunological Methods</u> 161:169-176 (1993)
BQ	Hartl, F.U., "Molecular chaperones in cellular protein folding," <u>Nature</u> 381:571-580 (1996)
BR	Higazi, A.A et al., "Single-Chain Urokinase-Type Plasminogen Activator Bound to its Receptor is Relatively Resistant to Plasminogen Activator Inhibitor Type 1," <u>Blood</u> 87(9):3545-3549 (1996)
BS	Hogan, J.C., "Directed combinatorial chemistry," <u>Nature Supp.</u> 384:17-19 (1996)
BT	Holskin, B.P. et al., "A Continuous Fluorescence-Based Assay of Human Cytomegalovirus Protease Using a Peptide Substrate," <u>Anal. Biochem.</u> 226:148-155 (1995)
BU	Horisberger, M.A. et al., "Interferon-Alpha Hybrids," <u>Pharmac. Ther.</u> 66(3):507-534 (1995)
BV	Hu, R. et al., "Evidence for Multiple Binding Sites for Several Components of Human Lymphoblastoid Interferon- α ," <u>J. Biol. Chem.</u> 268(17):12591-12595 (1993)
BW	Janda, K.D. et al., "Direct selection for a catalytic mechanism from combinatorial antibody libraries," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 91:2532-2536 (1994)
BX	Kang, Y.S. et al., "Effects of Expression of Mammalian G α and Hybrid Mammalian-Yeast G α Proteins on the Yeast Pheromone Response Signal Transduction Pathway," <u>Mol. Cell Biol.</u> 10(6):2582-2590 (1990)
BY	Khosla, C. et al., "Generation of polyketide libraries via combinatorial biosynthesis," <u>TIBTECH</u> 14 (1996)
BZ	Kim, B. et al., "Human immunodeficiency virus reverse transcriptase substitutes for DNA polymerase I in <i>Escherichia coli</i> ," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 92:684-688 (1995)
CA	Kirpekar, F. et al., "7-Deaza Purine Bases Offer a Higher Ion Stability in the Analysis of DNA by Matrix-assisted Laser Desorption/Ionization Mass Spectrometry," <u>Rapid Communications in Mass Spectrometry</u> 9:525-531 (1995)
CB	Kontsek, P., "Human Type I Interferons: Structure and Function," <u>Acta Virologica</u> 38:345-360 (1994)
CC	Kristensen, C. et al., "A single-chain insulin-like growth factor I/insulin hybrid binds with high affinity to the insulin receptor," <u>Biochem. J.</u> 305:981-986 (1995)
CD	Langer, J.A. et al., "Binding of Human Alpha-Interferons to Natural Killer Cells," <u>J. Interferon Res.</u> 6:97-105 (1986)
CE	Lathrop, R.H. et al., "Global Optimum Protein Threading with Gapped Alignment and Empirical Pair Score Functions," <u>J. Mol. Biol.</u> 255:641-665 (1996)
CF	Levichkin, I.V. et al., "A New Approach to Construction of Hybrid Genes: Homolog Recombination Method," <u>Mol. Biol.</u> 29(5):572-577 (1995)
CG	Li, J. et al., "Single Chain Human Interleukin 5 and Its Asymmetric Mutagenesis for Mapping Receptor Binding Sites," <u>J. Biol. Chem.</u> 271(4):1817-1820 (1996)
CH	Lotze, M.T. et al., "High-Dose Recombinant Interleukin 2 in the Treatment of Patients with Disseminated Cancer," <u>J. Amer. Med. Assoc.</u> 256(22):3117-3124 (1986)

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(Use several sheets if necessary)

Applicant: PHILLIP A. PATTEN et al.

Filing Date: ~~12/18/96~~

Group: Unknown

CI	Lundberg, K.S. et al., "High-fidelity amplification using a thermostable DNA polymerase isolated from <i>Pyrococcus furiosus</i> ," <u>Gene</u> 108:1-6 (1991)
CJ	Mattheakis, L. C. et al., "As in vitro polysome display system for identifying ligands from very large peptide libraries," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 91:9022-9026 (1994)
CK	Matthews, D.J. et al., "Substrate Phage: Selection of Protease Substrates by Monovalent Phage Display," <u>Science</u> 260:1113-1117 (1993)
CL	McCafferty, J. et al., "Selection and Rapid Purification of Murine Antibody Fragments That Bind a Transition-State Analog by Phage Display," <u>Applied Biochem. Biotech.</u> 47:157-173 (1994)
CM	Medberry, S.L. et al., "Intra-chromosomal rearrangements generated by Cre-lox site-specific recombination," <u>Nucl. Acids Res.</u> 23(3):485-490 (1995)
CN	Meister, A. et al., "Biological Activities and Receptor Binding of Two Human Recombinant Interferons and their Hybrids," <u>J. Gen. Virol.</u> 67:1633-1643 (1986)
CO	Metcalf, W.W. et al., "Mutational Analysis of an <i>Escherichia coli</i> Fourteen-Gene Operon for Phosphonate Degradation, Using <i>TnpA</i> ' Elements," <u>J. Bacteriology</u> 175(11):3430-3442 (1993)
CP	Northrup, J.P. et al., "Characterization of the Nuclear and Cytoplasmic Components of the Lymphoid-specific a Nuclear Factor of Activated T Cells (NF-AT) Complex," <u>J. Biol. Chem.</u> 268(4):2917-2923 (1993)
CQ	Nürnberg, B. et al., "Receptors and G proteins as primary components of transmembrane signal transduction," <u>J. Mol. Med.</u> 73:123-132 (1995)
CR	Ohnishi, H. et al., "Prolongation of Serum Half-Life of Interleukin 2 and Augmentation of Lymphokine-activated Killer Cell Activity by Pepstatin in Mice," <u>Canc. Res.</u> 50:1107-1112 (1990)
CS	O'Neil, K.T. et al., "Phage display: protein engineering by directed evolution," <u>Curr. Op. Struct. Biol.</u> 5:443-449 (1995)
CT	Ortaldo, J.R. et al., "A species of human α interferon that lacks the ability to boost human natural killer activity," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 81:4926-4929 (1984)
CU	Overall, M.L. et al., "Different Interactions of Interferon- α Subtypes at the Surface of Epithelial and Lymphoid Cells," <u>J. Interferon Res.</u> 12:281-288 (1992)
CV	Ozes, O.N. et al., "A Comparison of Interferon-Con1 with Natural Recombinant Interferons- α : Antiviral, Antiproliferative, and Natural Killer-Inducing Activities," <u>J. Interferon Res.</u> 12:55-59 (1992)
CW	Panka, D.J. et al., "Variable region framework differences result in decreased or increased affinity of variant anti-digoxin antibodies," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 85:3080-3084 (1988)
CX	Papas, T.S. et al., "Nucleotide Sequence and Organization of the Transforming Region and Large Terminal Redundancies (LTR) of Avian Myeloblastosis (AMV)," <u>J. Cell. Biochem.</u> 20:95-103 (1982)
CY	Parker, L.T. et al., "Peak Height Variations in Automated Sequencing of PCR Products Using Taq Dye-Terminator Chemistry," <u>BioTechniques</u> 19(1):116-121 (1995)
CZ	Patten, P.A. et al., "The Immunological Evolution of Catalysis," <u>Science</u> 271:1086-1091 (1996)

FORM PTO-1449 (Modified)		Attorney Docket No. 18097-020500 02-0205205	Serial No.: 08/769,062 <i>unassigned</i>
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)		Applicant: PHILLIP A. PATTEN et al.	
		Filing Date: 12/10/96 <i>unassigned</i>	Group: Unknown

DA	Pérez-Pérez, J. et al., "Increasing the Efficiency of Protein Export in <i>Escherichia coli</i> ," <u>Biotechnology</u> 12:178-180 (1994)
DB	Pérez-Pérez, J. et al., "DNAK/DNAJ Supplementation Improves the Periplasmic Production of Human Granulocyte-Colony Stimulating Factor in <i>Escherichia coli</i> ," <u>Biochem. Biophys. Res. Commun.</u> 210(2):524-529 (1995)
DC	Post, G.R. et al., "G protein-coupled receptors and signaling pathways regulating growth responses," <u>FASEB J.</u> 10:741-749 (1996)
DD	Price, L.A. et al., "Functional Coupling of a Mammalian Somatostatin Receptor to the Yeast Pheromone Response Pathway," <u>Mol. Cell Biol.</u> 15(11):6188-6195 (1995)
DE	Pugsley, A.P., "The Complete General Secretory Pathway in Gram-Negative Bacteria," <u>Microbiol. Rev.</u> 57(1):50-108 (1993)
DF	Ranu, R.S., "DNA Sequencing with Δ Taq [®] DNA Polymerase," <u>BioTechniques</u> 18(3):390-395 (1995)
DG	Raport, C.J. et al., "The orphan G-protein-coupled receptor-encoding gene V28 is closely related to genes for chemokine receptors and is expressed in lymphoid and neural tissues," <u>Gene</u> 163:295-299 (1995)
DH	Rashtchian, A., "Novel methods for cloning and engineering genes using the polymerase chain reaction," <u>Current Op Biotech.</u> 6:30-36 (1995)
DI	Reisine, T. et al., "Molecular Mechanisms of Opiate Receptor Coupling to G Proteins and Effector Systems," <u>Annals N.Y. Acad. Sci.</u> 780:168-175 (1996)
DJ	Rohlmann, A. et al., "Sustained somatic gene inactivation by viral transfer of Cre recombinase," <u>Nature Biotechnology</u> 14:1562-1565 (1996)
DK	Rosenberg, A.H. et al., "Effects of Consecutive AGG Codons on Translation in <i>Escherichia coli</i> , Demonstrated with a Versatile Codon Test System," <u>J. Bacteriology</u> 175(3):716-722 (1993)
DL	Saggio, I. et al., "Functional phage display of ciliary neurotrophic factor," <u>Gene</u> 152:35-39 (1995)
DM	Sandkvist, M. et al., "Secretion of recombinant proteins by Gram-negative bacteria," <u>Current Op. Biotech.</u> 7:505-511 (1996)
DN	Sauer, B. et al., "Site-specific DNA recombination in mammalian cells by the Cre recombinase of bacteriophage P1," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 85:5166-5170 (1988)
DO	Schatz, P.J. et al., "Genetic Analysis of Protein Export in <i>Escherichia coli</i> ," <u>Ann. Rev. Genet.</u> 24:215-248 (1990)
DP	Scheidl, T.M. et al., "Automated Fluorescent Dye-Terminator Sequencing of G+C-Rich Tracts with the Aid of Dimethyl Sulfoxide," <u>Biotechniques</u> 19:691-694 (1995)
DQ	Seed, B. et al., "Molecular cloning of the CD2 antigen, the T-cell erythrocyte receptor, by a rapid immunoselection procedure," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 84:3365-3369 (1987)
DR	Seed, B., Developments in expression cloning," <u>Current Op. Biotech.</u> 6:567-573 (1995)
DS	Seto, D. et al., "DMSO resolves certain compressions and signal dropouts in fluorescent dye labeled primer-based DNA sequencing reactions," <u>DNA Sequence</u> 5:131-140 (1995)
DT	Shenker, A., "G Protein-coupled receptor structure and function: the impact of disease-causing mutations," <u>Baillieres Clin. Endo. Metab.</u> 9(3):427-451 (1995)

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Reference Designation		U.S. PATENT DOCUMENTS	
Examiner Initial	Document No.	Date	Name
AA	5,824,485	10/20/98	Thompson et al.
AB	5,783,431	7/21/98	Peterson et al.
AC	5,629,179	5/13/97	Mierendorf et al.
FOREIGN PATENT DOCUMENTS			
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AD	WO 98/42832	10/1/98	PCT
AE	WO 98/41653	9/24/98	PCT
AF	WO 98/41623	9/24/98	PCT
AG	WO 98/41622	9/24/98	PCT
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AI	WO 98/01581	1/15/98	PCT
AJ	WO 97/35966	10/2/97	PCT
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AL	WO 97/20078	6/5/97	PCT
OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)			
AM	Fisch et al., "A Strategy Of Exon Shuffling For Making Large Peptide Repertoires Displayed On Filamentous Bacteriophage", <u>Proc Natl Acad Sci USA</u> , 93(15):7761-7766 (1996)		
AN	Marton et al., "DNA Nicking Favors PCR Recombination", <u>Nucleic Acids Res.</u> , 19(9):2423-2426 (1991)		
AO	Winter et al., "Making Antibodies By Phage Display Technology", <u>Ann. Rev. Immunol.</u> , 12:433-455 (1994)		
AP	Greener et al., "An Efficient Random Mutagenesis Technique Using An E. coli Mutator Strain", <u>Methods in Molecular Biology</u> , 57:375-385 (1995)		
EXAMINER	DATE CONSIDERED 12/11/02		

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449 (Modified) LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)			Attorney Docket No.: 18097 <i>02-005205</i>		Application No.: 08/621,855 • <i>unassigned</i>	
			Applicant: Stemmer et al.		Group: 1634	
			Filing Date: March 25, 1996		Page: 1	
U.S. PATENT DOCUMENTS						
Reference Designation						
Examiner Initial	Document No.	Date	Name	Class	Sub-class	Filing Date (If Appropriate)
FOREIGN PATENT DOCUMENTS						
	Document No.	Date	Country	Class	Sub-class	Translate (Yes/No)
<i>AA</i>	WO 95/17413	6/29/95	PCT			
OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)						
EXAMINER <i>AA</i>			DATE CONSIDERED <i>12/11/03</i>			

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

COPY FROM PARENT

J1050 U.S. PTO
 09/954692
 09/12/01

Substitute for form 1449A-B/PTO

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

COPY FROM PARENT
(use as many sheets as necessary)

Complete if Known

Application Number	00/789,062 <i>unassigned</i>
Filing Date	December 18, 1996 <i>unassigned</i>
First Named Inventor	Phillip A. Patten
Group Art Unit	1634
Examiner Name	Zitomer, S.
Attorney Docket Number	02-020600US <i>02-020522US</i>

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T
<i>hw</i>		JONES, ET AL., DNA Mutagenesis and Recombination. Nature. April 19, 1990, pages 793-794, Vol. 344,	
		PRODROMOU et al., PROTOCOL: Recursive PCR: a novel technique for total gene synthesis, Protein Engineering, 1992, pages 827-829, Vol. 5, No. 8. Oxford University Press,	
		BENDIXEN, et al. A Yeast Mating-Selection Scheme for Detection of Protein-Protein Interactions. Nucleic Acids Research, 1994, pages 1778-1779, Vol. 22, No. 9,	
<i>hw</i>		MANDECKI, et al, FokI method of gene synthesis (Recombinant DNA; oligodeoxyribonucleotide; bridge mutagenesis; cloning; gene assembly; HIV) Gene. 1988. Pages 101-107, Vol. 68, Elsevier Science Publishers	
<i>hw</i>		REISKOFSKI et al., Polymerase Chain Reaction (PCR) Techniques for Site-Directed Mutagenesis. Biotech. Adv. 1992, pages 535-547, Vol. 10, Pergamon Press, Ltd, Great Britain	

Examiner Signature	<i>hw</i>	Date Considered	<i>12/11/07</i>
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

through 10/31/99. OMB 0651-0031

COPY FROM PARENT
(use as many sheets as necessary)

Application Number	08/769,062 <i>unassigned</i>
Filing Date	December 18, 1996 <i>unassigned</i>
First Named Inventor	Phillip A. Patten
Group Art Unit	1634
Examiner Name	Zitomer, S.
Attorney Docket Number	02-020500US <i>02-020522US</i>

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Page 1 of 2

FORM PTO-1449 (Modified)	Attorney Docket No. 18097-020300 <i>02-02032205</i>	Serial No.: 08/769,062 <i>unassigned</i>
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)	Applicant: PHILLIP A. PATTEN et al.	
	Filing Date: 12/18/96 <i>unassigned</i>	Group: Unknown

Reference Designation U.S. PATENT DOCUMENTS

Examiner Initial	Document No.	Date	Name	Class	Sub-class	Filing Date (If Appropriate)
<i>AA</i>	5,525,486	06/11/96	Honjo et al.	C12N	15/00	
AB	5,565,332	10/15/96	Hoogenboom et al.	435	69.1	
AC						

FOREIGN PATENT DOCUMENTS

	Document No.	Date	Country	Class	Sub-class	Translation (yes/no)
AD						
AE						

OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

AF	Cadwell et al., "RANDOMIZATION OF GENE BY PCR MUTAGENESIS" Research, PCR Methods and Applications, pp. 28-33 (1992)
AG	Cramer et al., "CONSTRUCTION AND EVOLUTION OF ANTIBODY-PHAGE LIBRARIES BY DNA SHUFFLING" Nature Medicine 2(1):100-102 (1996)
AH	Mandecki et al., "FOKI METHOD OF GENE SYNTHESIS (RECOMBINANT DNA; OLIGODEOXYRIBONUCLEOTIDE; BRIDGE MUTAGENESIS; CLONING; GENE ASSEMBLY; HIV) Gene 68:101-107 (1988)
AI	Matthews et al., "SUBSTRATE PHAGE: SELECTION OF PROTEASE SUBSTRATES BY MONOVALENT PHAGE DISPLAY" Science 260:1113-1117 (1993)
AJ	O'Neil et al., "PHAGE DISPLAY: PROTEIN ENGINEERING BY DIRECTED EVOLUTION" Current Opinion in Structural Biology 5:443-449 (1995)
AK	Reikofski et al., "POLYMERASE CHAIN REACTION (PCR) TECHNIQUES FOR SITE-DIRECTED MUTAGENESIS" BIOTECH. ADV. 10:535-547 (1992)
AL	Seed et al., "MOLECULAR CLONING OF THE CD2 ANTIGEN, THE T-CELL ERYTHROCYTE RECEPTOR, BY A RAPID IMMUNOSELECTION PROCEDURE" Proc. Natl. Acad. Sci USA 84:3365-3369 (1987)
<i>AM</i>	Sweasy et al., "DETECTION AND CHARACTERIZATION OF MAMMALIAN DNA POLYMERASE β MUTANTS BY FUNCTIONAL COMPLEMENTATION IN ESCHERICHIA COLI" Proc. Natl. Acad. Sci. USA 90:4626-4630 (1993)

EXAMINER

DATE CONSIDERED

MINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute for form 1449A-B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT COPY FROM PARENT (use as many sheets as necessary)	Complete if Known	
	Application Number	00/747448 <i>Unassigned</i>
	Filing Date	November 18, 2000 <i>Unassigned</i>
	First Named Inventor	Phillip A. Patton
	Group Art Unit	Unassigned
	Examiner Name	Unassigned
	Attorney Docket Number	02-020520US 02-020522US

<i>[Signature]</i>	AP	HIGUCHI et al., (1988) "A general method of <i>in vitro</i> preparation and specific mutagenesis of DNA fragments: study of protein and DNA interactions." <u>Nucleic Acids Research</u> 16(15): 7351-7367.	
	AQ	SHI et al., (1993) "Rapid PCR Construction of a Gene Containing Lym-1 Antibody Variable Regions." <u>PCR Methods and Applications</u> 3: 46-53.	
	AR	SHULDINER, A.R. et al., (1989) "Hybrid DNA artifact from PCR of closely related target sequences," <u>Nuc. Acids Res.</u> 17(11): 4409.	
	AS	SANDHU, G.S. et al., (1992) "Dual Asymmetric PCR: One-Step Construction of Synthetic Genes," <u>Biotechniques</u> 12(01): 14-16.	
	AT	Biotransformations, Pathogenesis, and Evolving Biotechnology, Program and Abstracts, Pseudomonas '89, American Society for Microbiology and The University of Illinois, July 9-13, 1989, Abstract Nos. 11-21 - 11-25, p. 26.	
	AU	SMITH et al. (1991) "Localized sex in bacteria," <u>Nature</u> , 349: 29-31.	
	AV	MICHAEL et al., (c. 1997) "Thermostable Ligase-Mediated Incorporation of Mutagenic Oligonucleotides During PCR Amplifications," <u>Methods in Molecular Biology</u> , Vol. 67, PCR Cloning Protocols: From Molecular Cloning to Genetic Engineering pp. 189-195.	
	AW	NER et al. (1988) "Laboratory Methods: A Simple and Efficient Procedure for Generating Random Point Mutations and for Codon Replacements Using Mixed Oligodeoxynucleotides," <u>DNA</u> 7: 127-134.	
	AX	MERYHANS et al., (1990) "DNA recombination during PCR," <u>Nuc Acids Res.</u> 18(7): 1687-1691.	
	AY	WEBBER et al. (1983) "Formation of gene coding for hybrid proteins by recombination between related cloned genes in <i>E. coli</i> ." <u>Nuc. Acids Res.</u> 11(16): 5661-5669.	
	AZ	POMPON et al. (1989) "Protein engineering by cDNA recombination in yeasts, shuffling of mammalian cytochrome P-450 functions." <u>Gene</u> 83: 15-24.	
	BA	HORTON et al. (1990) "Gene splicing by overlap extension: Tailor-made genes using the polymerase chain reaction." <u>Biotechniques</u> 8(5): 528-535.	
<i>[Signature]</i>	BB	KLUG et al. (1991) "Creating chimeric molecules by PCR directed homologous DNA recombination." <u>Nuc. Acids Res.</u> 19(10): 2793.	
<i>[Signature]</i>	BC	ROUWENDAL et al., (1993) "Simultaneous Mutagenesis of Multiple Sites: Application of the Urase Chain Reaction Using PCR Products instead of Oligonucleotides." <u>Biotechniques</u> 15(1): 68-70, 72-74, 76.	

Examiner Signature	<i>[Signature]</i>	Date Considered	12/11/03
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449 (Modified)		Attorney Docket 010097-01461205 <u>02-02052205</u>	Serial No.: 00/621,859 <u>Unassigned</u>
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)		Applicant: Stemmer and Cramer	Group: 1807
		Filing Date: <u>Unassigned</u> March 25, 1996	
Reference Designations (Including Author, Title, Date, Pertinent Pages, Etc.)			
Examiner Initial			
<u>AS</u>	Berkhout et al. "In vivo selection of randomly mutated retroviral genomes" <u>Nucleic Acids Res.</u> 21:5020-5023 (1993).		
<u>AT</u>	Cadwell et al. "Randomization of genes by PCR mutagenesis" <u>PCR Methods and Applications</u> 2:28-33 (1992). (<u>previously submitted</u>)		
<u>AU</u>	Calogero et al. "In vivo recombination and the production of hybrid genes" <u>Microbiol. Lett.</u> 97:41-44 (1992).		
<u>AV</u>	Caren et al. "Efficient sampling of protein sequence space for multiple mutants" <u>Biotechnology</u> 12:517-520 (1994).		
<u>AW</u>	Delagrave et al. "Recursive ensemble mutagenesis" <u>Protein Engineering</u> 6:327-331 (1993).		
<u>AX</u>	Feinberg and Vogelstein "A technique for radiolabeling DNA restriction endonuclease fragments to high specific activity" <u>Anal. Biochem.</u> 132:6-13 (1983).		
<u>AY</u>	Heim et al. "Wavelength mutations and postranslational autooxidation of green fluorescent protein" <u>Proc. Natl. Acad. Sci. USA</u> 91:12501-12504 (1994).		
<u>AZ</u>	Hermes et al. "Searching sequence space by definably random mutagenesis: Improving the catalytic potency of an enzyme" <u>Proc. Natl. Acad. Sci. USA</u> 87:696-700 (1990).		
<u>AAA</u>	Ho et al. "Site-directed mutagenesis by overlap extension using the polymerase chain reaction" <u>Gene</u> 77:51-59 (1989).		
<u>AAB</u>	Horton et al. "Engineering hybrid genes without the use of restriction enzymes: Gene splicing by overlap extension" <u>Gene</u> 77:61-68 (1989).		
<u>AAC</u>	Jones et al. "Recombinant cycle PCR and recombination PCR for site-specific mutagenesis without PCR product purification" <u>BioTechniques</u> 12:528-530, 532, 534-535 (1992).		
<u>AAD</u>	Kim et al. "Human immunodeficiency virus reverse transcriptase" <u>J. Biol. Chem.</u> 271:4872-4878 (1996).		
<u>AAE</u>	Leung et al. "A method for random mutagenesis of a defined DNA segment using a modified polymerase chain reaction" <u>Techniques</u> 1:11-15 (1989).		
EXAMINER	DATE CONSIDERED <u>12/11/87</u>		

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MP: 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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FORM PTO-1449 (Modified)

Attorney Docket

Serial No.:

018097-01461203

08/621,859

LIST OF PATENTS AND PUBLICATIONS FOR
APPLICANT'S INFORMATION DISCLOSURE
STATEMENT

(Use several sheets if necessary)

Applicant: Stemmer and Crameri

Filing Date:

Group:

March 25, 1998

3807

Reference Designation

U.S. PATENT DOCUMENTS

Examiner Initial	Document No.	Date	Name	Class	Sub-class	Filing Date (If Appropriate)
AA	4,994,368	02/19/91	Goodman et al.			
AB	5,043,272	08/27/91	Hartley			
AC	5,093,257	03/03/92	Gray			
AD	5,223,408	06/29/93	Goeddel et al.			
AE	5,279,952	01/18/94	Wu			
AF	5,360,728	12/01/94	Prasher			
AG	5,521,077	05/28/96	Khosla et al			
AH	5,541,309	07/30/96	Prasher			
AI	5,605,793	02/25/97	Stemmer			
AJ	5,652,116	07/29/97	Grandi et al.			

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09/12/01

FOREIGN PATENT DOCUMENTS

	Document No.	Date	Country	Class	Sub-class	Translation (yes/no)
AK	EP 252666 B1	01/13/88	Europe			
AL	WO 90/07576	07/12/90	PCT			
AM	WO 91/01087	02/07/91	PCT			
AN	WO 95/17413	06/29/95	PCT			
AO	WO 97/07205	02/27/97	PCT			

OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)

AP	Arkin et al., "An algorithm for protein engineering: Stimulation of recursive ensemble mutagenesis" <u>Proc. Natl. Acad. Sci. USA</u> 89:7811-7815 (1992).
AQ	Beaudry et al., "Directed evolution of an RNA enzyme" <u>Science</u> 257:635-641 (1992).
AR	Berger et al. "Phoenix mutagenesis: One-step reassembly of multiply cleaved plasmids with mixtures of mutant and wild-type fragments" <u>Anal. Biochem.</u> 214:571-579 (1993).

EXAMINER.

DATE CONSIDERED

12/11/03

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449 (Modified)		Attorney Docket 018097-014612US <i>02-0205-2205</i>	Serial No.: 08/621,859 <i>Unassigned</i>
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)		Applicant: Stemmer and Cramer	
		Filing Date: <i>Unassigned</i> March 25, 1996	Group: 1807
Reference Designations (Including Author, Title, Date, Pertinent Pages, Etc.)			
Examiner Initial			
<i>AAF</i>	Marks et al. "By-passing immunization: Building high affinity human antibodies by chain shuffling" <u>Bio/Technology</u> 10:779-782 (1992).		
<i>AAG</i>	Meyerhans et al. "DNA recombination using PCR" <u>Nucleic Acids Res.</u> 18:1687-1691 (1990).		
<i>AAH</i>	Oliphant et al. "Cloning of random-sequence oligodeoxynucleotides" <u>Gene</u> 44:177-183 (1988).		
<i>AAI</i>	Pharmacia Catalog pp. 70-71 (1993 Edition).		
<i>AAJ</i>	Pompon et al. "Protein engineering by cDNA recombination in yeasts: Shuffling of mammalian cytochrome P-450 functions" <u>Gene</u> 83:15-24 (1989).		
<i>AAK</i>	Reidhaar-Olson et al. "Combinatorial cassette mutagenesis as a probe of the informational content of protein sequences" <u>Science</u> 241:53-57 (1988).		
<i>AAL</i>	Rao et al. "Recombination and polymerase error facilitate restoration of infectivity in brome mosaic virus" <u>J. Virol.</u> 67:969-979 (1993).		
<i>AAM</i>	Stemmer et al. "Selection of an active single chain Fv antibody from a protein linker library prepared by enzymatic inverse PCR" <u>BioTechniques</u> 14:256-265 (1992).		
<i>AAN</i>	Stemmer et al. "Rapid evolution of a protein in vitro by DNA shuffling" <u>Nature</u> 370:389-391 (1994). (<i>previously submitted</i>)		
<i>AAO</i>	Stemmer et al. "DNA shuffling by random fragmentation and reassembly: In vitro recombination for molecular evolution" <u>Proc. Natl. Acad. Sci. USA</u> 91:10747-10751 (1994). (<i>previously submitted</i>)		
EXAMINER <i>mm</i>	DATE CONSIDERED <i>12/11/83</i>		

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COPY FROM PARENT

FORM PTO-1449 (Modified)		Attorney Docket No. 18097-020500 <u>02-0052205</u>	Serial No.: 08/769,062 <u>UNASSIGNED</u>
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)		Applicant: PHILLIP A. PATTEN et al.	
		Filing Date: 12/18/96 <u>UNASSIGNED</u>	Group: Unknown

<input checked="" type="checkbox"/> DU	Siderovski, D.P. et al., "A new family of regulators of G-protein-coupled receptors?" <u>Current Biology</u> 6(2):211-212 (1996)
<input type="checkbox"/> DV	Simonen, M. et al., "Protein Secretion in <i>Bacillus</i> Species," <u>Microbiol. Rev.</u> 57(1):109-137 (1993)
<input type="checkbox"/> DW	Skatrud, P.L. et al., "Genetic engineering of β -lactam antibiotic biosynthetic pathways in filamentous fungi," <u>TIBTECH</u> 10:324-329 (1992)
<input type="checkbox"/> DX	Skerra, A. et al., "Filter Screening of Antibody Fab Fragments Secreted from Individual Bacterial Colonies: Specific Detection of Antigen Binding with a Two-Membrane System," <u>Anal. Biochem.</u> 196:151-155 (1991)
<input type="checkbox"/> DY	Smirnov, Y.V. et al., "Synthesis in <i>Escherichia coli</i> and a Rapid Method of Isolating High-Activity Recombinant His ₆ DNA Polymerase from <i>Thermus aquaticus</i> ," <u>Russian J. Bioorganic Chem.</u> 21(5):341-342 (1995)
<input type="checkbox"/> DZ	Smith, L.M., "Sequence from spectrometry: A realistic prospect," <u>Nature Biotechnology</u> 14:1084-1087 (1996)
<input type="checkbox"/> EA	Smith, R.A.G. et al., "Chemical derivatization of therapeutic proteins," <u>TIBTECH</u> 11:397-403 (1993)
<input type="checkbox"/> EB	Solar, I. et al., "Linker modification introduces useful molecular instability in a single chain antibody," <u>Protein Engineering</u> 8(7):717-723 (1995)
<input type="checkbox"/> EC	Song, Z.H. et al., "Molecular Cloning and Chromosomal Localization of Human Genes Encoding Three Closely Related G Protein-Coupled Receptors," <u>Genomics</u> 28:347-349 (1995)
<input type="checkbox"/> ED	Spiegel, A.M., "Defects in G Protein-Coupled Signal Transduction in Human Disease," <u>Ann. Rev. Physiol.</u> 58:143-170 (1995)
<input type="checkbox"/> EF	Spiegel, A.M., "Genetic Bases of Endocrine Disease," <u>J. Clin. Endocrin. Metab.</u> 81(7):2434-2442 (1996)
<input type="checkbox"/> EG	Stemmer, W.P.C., "Rapid evolution of a protein in vitro by DNA shuffling," <u>Nature</u> 370:389-391 (1994)
<input type="checkbox"/> EH	Stemmer, W.P.C., "DNA shuffling by random fragmentation and reassembly: In vitro recombination for molecular evolution," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 91:10747-10751 (1994)
<input type="checkbox"/> EI	Stemmer, W.P.C., "Searching Sequence Space, Using recombination to search more efficiently and thoroughly instead of making bigger combinatorial libraries," <u>Biotechnology</u> 13:549-553 (1995)
<input type="checkbox"/> EJ	Stemmer, W.P.C. et al., "Single-step assembly of a gene and entire plasmid from large numbers of oligodeoxyribonucleotides," <u>Gene</u> 164:49-53 (1995)
<input type="checkbox"/> EK	Stemmer, W.P.C., "The Evolution of Molecular Computation," <u>Science</u> 270:1510 (1995)
<input type="checkbox"/> EL	Strader, C.D. et al., "The family of G-protein-coupled receptors," <u>FASEB J.</u> 9:745-754 (1995)
<input type="checkbox"/> EM	Sweasy, J.B. et al., "Detection and characterization of mammalian DNA polymerase β mutants by functional complementation in <i>Escherichia coli</i> ," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 90:4626-4630 (1993)
<input checked="" type="checkbox"/> EN	Sweasy, J.B. et al., "DNA Polymerase β Can Substitute for DNA Polymerase I in the Initiation of Plasmid DNA Replication," <u>J. Bacteriology</u> 177(10):2923-2925 (1995)

FORM PTO-1449 (Modified)		Attorney Docket 18097-020500 <u>02-02052005</u>	Serial No.: 00/769,062 <u>unassigned</u>
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)		Applicant: PHILLIP A. PATTEN et al.	
		Filing Date: <u>12/18/96</u>	Group: Unknown

EO	Su, S.S. et al., "Escherichia coli mutS-encoded protein binds to mismatched DNA base pairs," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 83:5057-5061 (1986)
EP	Suzuki, M. et al., "Random mutagenesis of <i>Thermus aquaticus</i> DNA polymerase I: Concordance of immutable sites in vivo with the crystal structure," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 93:9670-9675 (1996)
EQ	Tabor S. et al., "DNA Sequence Analysis with a Modified Bacteriophage T7 DNA polymerase," <u>J. Biol. Chem.</u> 265(14):8322-8328 (1990)
ER	Théze, J. et al., "Interleukin 2 and its receptors: recent advances and new immunological functions," <u>Immunol. Today</u> 17(10):481-486 (1996)
ES	Turner, S.L. et al., "Use of Deoxyinosine in PCR to Improve Amplification of GC-Rich DNA," <u>Biotechniques</u> 19(1):48-52 (1995)
ET	von der Osten, C. et al., "Protein engineering of subtilisins to improve stability in detergent formulations," <u>J. Biotech.</u> 28:55-68 (1993)
EU	Wagner, R. et al., "Mutation detection using immobilized mismatch binding protein (MutS)," <u>Nucl. Acids Res.</u> 23(19):3944-3948 (1995)
EV	Wall, J.G. et al., "Effects of overexpressing folding modulators on the in vivo folding of heterologous proteins in <i>Escherichia coli</i> ," <u>Current Op. Biotech.</u> 6:507-516 (1995)
EW	Weck, P.K. et al., "Comparison of the Antiviral Activities of Various Cloned Human Interferon- α Subtypes in Mammalian Cell Cultures," <u>J. Gen. Virol.</u> 57:233-237 (1981)
EX	Wettstein, D.A., "Expression of a Class II Major Histocompatibility Complex (MHC) Heterodimer in a Lipid-linked Form with Enhanced Peptide/Soluble MHC Complex Formation at Low pH," <u>J. Exp. Med.</u> 174:219-228 (1991)
EY	Young, N.M. et al., "Thermal stabilization of a single-chain Fv antibody fragment by introduction of a disulphide bond," <u>FEBS Letts.</u> 377:135-139 (1995)
EZ	Zhang, T. et al., "Circular Permutation of T4 Lysozyme," <u>Biochemistry</u> 32:12311-12318 (1993)
FA	Zhao, X., "EPD, a novel technology for drug delivery," <u>Adv. Drug Deliv. Rev.</u> 17:257-262 (1995)
FB	

EXAMINER	<u>me</u>	DATE CONSIDERED	<u>12/11/02</u>
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EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



(Modified) PTO/SB/08A-B (10-96)
Approved for use through 10/31/99. OMB 0651-0031

Substitute for form 1449A-B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)	Application Number	09/954,692
	Filing Date	September 12, 2001
	First Named Inventor	Phillip A. Patten
	Group Art Unit	Unassigned 09/954,692
	Examiner Name	Unassigned
	Attorney Docket Number	02-020522US

U.S. PATENT DOCUMENTS						
Examiner Initials	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code (if known)			
SC	AA	5,498,531		Jarrell	09-10-1993	
	AB	5,501,962		Bradford-Goldberg et al.	03-26-1996	
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	AN	6,303,344		Patten et al.	10-16-2001	

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Examiner Initials	Cite No.	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T
		Office	Number	Kind Code (if known)				
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	AP	AU	724,698		Arnold et al.	10-01-1998		
	AQ	AU	732,146		Patten et al.	06-25-1998		
	AR	EP	0 316 018	A2	Cetin Corp	05-17-1989		
	AS	EP	0 316 018	A3	Cetin Corp	05-17-1989		
	AT	EP	0 385 410	B1	Baylor College Medicine	01-25-1990		
	AU	EP	0 439 182	B1	Backman et al.	07-31-1991		
	AV	EP	0 596 918	B1	Birkenmeyer et al.	05-18-1994		
	AW	EP	0 633 944	B1	Bouma et al.	01-18-1995		

Examiner Signature	<i>SC Patten</i>	Date Considered	6-23-03
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



(Modified) PTO/SB/08A-B (10-96)
Approved for use through 10/31/99. OMB 0651-0031

Substitute for form 1449A-B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)	Complete If Known	
	Application Number	09/954,692
	Filing Date	September 12, 2001
	First Named Inventor	Phillip A. Patten
	Group Art Unit	Unassigned
	Examiner Name	Unassigned
	Attorney Docket Number	02-020522US

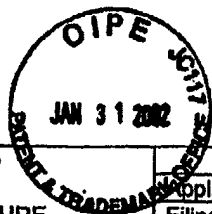
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BN	WO	97/07206		Okkels	02-27-1997	
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BP	WO	97/35957		Stemmer	10-02-1997	
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OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
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BU		Arnold (1998) "When blind is better: protein designed by evolution." <i>Nat Biotechnology</i> 16(7):617-618	

Examiner Signature	S. Zolner	Date Considered	6-23-03
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



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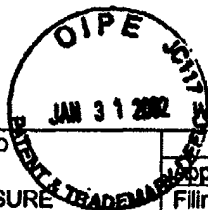
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	Application Number	09/954,692
	Filing Date	September 12, 2001
	First Named Inventor	Phillip A. Patten
	Group Art Unit	Unassigned
	Examiner Name	Unassigned
	Attorney Docket Number	02-020522US

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<input type="checkbox"/>	BX	Barany (1991) "The ligase chain reaction in a PCR world." <i>PCR Methods Appl.</i> 1(1):5-16	
<input type="checkbox"/>	BY	Bolli et al (1997) "Pyranosyl-RNA: chiroselective self-assembly of base sequences by ligative oligomerization of tetranucleotide-2', 3'-cyclophosphates (with a commentary concerning the origion of biomolecular homochirality)." <i>Chem Biol</i> 4(4):309-320	
<input type="checkbox"/>	BZ	Crameri et al. (1993) "Display of biologically active proteins on the surface of filamentous phages: a cDNA cloning system for selection of functional gene products linked to the genetic information responsible for their production." <i>Gene</i> 137(1):69-75	
<input type="checkbox"/>	CA	Daughtery et al. (1994) "Bohr effect of the partially-ligated (CN-met) intermediates of hemoglobin as probed by quaternary assembly." <i>Biochemistry</i> 33(34):10345-10357	
<input type="checkbox"/>	CB	Doyle et al. (1992) "cooperative oxygen binding, subunit assembly, and sulfhydryl reaction kenetics of the eight cyanomet intermediate ligation states of human hemoglobin." <i>Biochemistry</i> 31(45):11182-11195	
<input type="checkbox"/>	CC	Gaskin et al. (1997) "Directed evolution of a industrially important enzyme." <i>Biochem Soc Trans</i> 25(1):155	
<input type="checkbox"/>	CD	Gilbert et al. (1997) "Origion of genes." <i>PNAS UDS</i> 94(15):7698-7703	
<input type="checkbox"/>	CE	Giver et al. (1998) "Combinatorial protein design by in lvro recombination." <i>Curr Opin Chem Biol.</i> 2(3):335-338	
<input type="checkbox"/>	CF	Giver et al. (1998) "Directed evolution if a thermostable esterase." <i>PNAS USA</i> 95(22):12809-12813	
<input type="checkbox"/>	CG	Graf et al. (1996) <i>PNAS USA</i> 11591-11596	
<input type="checkbox"/>	CH	Hurst et al. (1996) "A difficult phase for Introns-early Molecular evolution." <i>Curr Biol</i> 6(5):533-536	
<input type="checkbox"/>	CI	Kaczorowski et al. (1994) "Assebly of 18-nucleotide primeters by ligation of three hexamers: sequencing of large genomes by primer walking." <i>Analytical Biochemistry</i> 221(1):127-135	
<input type="checkbox"/>	CJ	Kaczorowski et al. (1996) "Automated four-color DNA sequencing using primers assembled by hexameter ligation." <i>Gene</i> 179(1):195-198	
<input type="checkbox"/>	CK	Kalin et al. (1992) "Evaluation of the ligase chain reaction (LCR) for the detection of point mutations." <i>Mutant Res</i> 283(2):119-123	
<input type="checkbox"/>	CL	Kato et al. (1996) "Construction of mini-F plasmid vectors for plasmid shuffling in <i>Escherichia coli</i> ." <i>Gene</i> 170(1):141-142	

Examiner Signature	<i>S. Z. Hower</i>	Date Considered	6-23-08
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



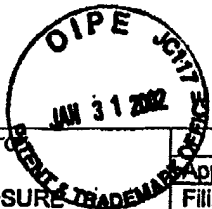
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Approved for use through 10/31/97 PMB 0851-00

Substitute for form 1449A-B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)	Complete if Known	
	Application Number	09/954,692
	Filing Date	September 12, 2001
	First Named Inventor	Phillip A. Patten
	Group Art Unit	Unassigned
	Examiner Name	Unassigned
	Attorney Docket Number	02-020522US

CM	Kikuchi et al. (2000) "An effective family shuffling method using single-stranded DNA." <i>Gene</i> 243:133-137
CN	Kishchenko et al. (1997) "Shuffling of structural elements in filamentous bacteriophages." <i>Proteins</i> 27(3):405-409
CO	Kuchner et al. (1997) "Directed evolution of enzyme catalyst." <i>Trends Biotechnol</i> 15(12):523-530
CP	Laffler et al. (1993) "The ligase chain reaction in DNA-based diagnosis." <i>Ann Biol Clin</i> 51(9):821-826
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CS	Matsumura et al. (1996) "DNA shuffling brightens prospects for GFP." <i>Nat Biotechnol</i> 14(3):366
CT	Meijer et al. (1996) "Directed evolution of a type I antifreeze protein expressed in <i>Escherichia coli</i> with sodium chloride as selective pressure and its effect on antifreeze tolerance." <i>Protein Eng.</i> 9(11):1051-1054
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CV	Moore et al. (1997) "Strategies for the in vitro evolution of protein function: enzyme evolution by random recombination of improved sequences." <i>J. Mol Biol.</i> 272(3):336-347
CW	Moore et al. (1996) "Directed evolution of a para-nitrobenzyl esterase for aqueous-organic solvents." <i>Nature Biotechnol</i> 14(4):458-467
CX	Muller-Dieckmann et al. (1995) "Substrate specificity and assembly of the catalytic center derived from two structures of ligated uridylyl kinase." <i>J. Mol. Biol.</i> 246(4):522-530
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CZ	Nardi et al. (1997) "Duplication of the prpF gene and shuffling of DNA fragments on the lactose plasmid of <i>Lactococcus lactis</i> ." <i>J. Bacteriol</i> 179(13):4164-4171
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DB	Ohlin et al. (1996) "Light chain shuffling of a high affinity antibody results in a drift in epitope recognition." <i>Mol Immunol</i> 33(1):47-56
DC	Patten et al. (1997) "applications of DNA shuffling to pharmaceuticals and vaccines." <i>Curr Opin Biotechnol</i> 8(6):724-733

Examiner Signature	<i>E. Patten</i>	Date Considered	6-7-03
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



(Modified) PTO/SB/08A-B (10-95)
Approved for use through 10/31/99. OMB 0651-0031

Substitute for form 1449A-B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)	Complete if Known	
	Application Number	09/954,692
	Filing Date	September 12, 2001
	First Named Inventor	Phillip A. Patten
	Group Art Unit	Unassigned
	Examiner Name	Unassigned
	Attorney Docket Number	02-020522US

	DD	Rouwendal et al. (1996) "Ligase chain reaction for site-directed in vitro mutagenesis." <i>Methods Mol Biol</i> 57:149-156	
	DE	Shabarova et al. (1991) "Chemical ligation of DNA: the first non-enzymatic assembly of a biologically active gene." <i>Nucleic Acids Res.</i> 19(15):4247-4251	
	DF	Shao et al. (1996) Engineering new functions and altering existing functions." <i>Curr Opin. Struct Biol</i> 6(4):513-518	
	DG	Shao et al. (1998) "Random-priming in vitro recombination: an effective tool for directed evolution." <i>Nucleic Acids Res.</i> 26(2):681-683	
	DH	Shimmer et al. (1995) "Ligase chain reaction." <i>Methods Mol Biol</i> 46:269-278	
	DI	Shuldner et al. (1990) "PCR-Induced (ligase-free) subcloning: a rapid reliable method to subclone polymerase chain reaction (PCR) products." <i>Nucleic Acids Res.</i> 18(7):1920	
	DJ	Strausberg et al. (1995) "directed evolution of a subtilisin with calcium-independent stability." <i>Biotechnology</i> 13(7):669-673	
	DK	Szostak (1997) "In vitro selection and directed evolution." <i>Harvey Lect</i> 93:95-118	
	DL	Tortoli et al. (1997) "Evaluation of a commercial ligase chain reaction kit (Abbott LCx) for directed detection of Mycobacterium tuberculosis in pulmonary and extrapulmonary specimens." <i>J. Clin. Microbiol.</i> 35(9):2424-2426	
	DM	You et al. (1996) "Directed evolution of subtilisin E in Bacillus subtilis to enhance total activity in aqueous dimethylformamide." <i>Protein Eng.</i> 9(1):77-83	
	DN	Youvan et al. <i>Nature</i> 401-410 (1992)	
	DO	Zhao et al. (1996) "Strategy for the directed evolution of a peptide ligase." <i>Ann NY Acad Sci</i> 799:1-5	
	DP	Zhao et al. (1997) "Functional and nonfunctional mutations distinguished by random recombination of homologous genes." <i>PNAS USA</i> 94(15):7997-8000	
	DQ	Zhao et al. (1997) "Optimization of DNA shuffling for high fidelity recombination." <i>Nucleic Acids Res.</i> 25(6):1307-1308	
	DR	STATEMENT OF GROUNDS AND PARTICULARS in the Matter of Australian Patent Application No. 732,148. October 12, 2001.	
	DS	European Search Report for Application No. 97953571.3	
	DT	European Search Report for Application No. 01202349.5	
	DU	European Search Report for Application No. 01202350.3	

Examiner Signature	<i>S. Blomer</i>	Date Considered	6-23-03
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Substitute for form 1449A-B/PTO

Complete if Known

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

Application Number 00/769,962 Unassigned
Filing Date December 18, 1996 Unassigned
First Named Inventor Phillip A. Patten
Group Art Unit 1634
Examiner Name Zitomer, S.
Attorney Docket Number 02-020500US 02-020522US

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AU	WO	93/18141	Biogen, Inc.	09-16-1993
AV	WO	93/25237	City of Hope	12-23-1993
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AX	WO	94/09817	City of Hope	05-11-1994
AY	WO	94/13804	Cambridge Antibody Tech. Ltd. Medical Res. Council	06-23-1994

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Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T
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	BA	Goldman, E.R. and Youvan D.C., (1992) Bio/Technology <u>10</u> :1557-1561	
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	BL	Yolov et al. (1990) Nucleic Acids Res. <u>18</u> :3983-3986	
	BM	Jayaraman et al. (1991) Proc Natl Acad Sci USA <u>88</u> :4084-4088	
	BN	Morl, M and Schmelzer, C. (1990) Nucleic Acids Res. <u>18</u> (22):6545-6551	
	BO	Mullis et al., (1986) Cold Harbor Spring Symposia on Quantitative Biology <u>51</u> :263-273	
	BP	Sikorski et al., (1991) Methods in Enzymology <u>194</u> :302-318	
	BQ	Mullis et al., (1987) Methods in Enzymology <u>155</u> :335-350	

Examiner Signature [Signature] Date Considered 12/11/93

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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Substitute for form 1449A-B/PTO

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

Complete if Known

Application Number 08/768,062 unassigned
 Filing Date December 18, 1996 unassigned
 First Named Inventor Phillip A. Patten
 Group Art Unit 1634
 Examiner Name Zitomer, S.
 Attorney Docket Number 02-020500US-02-020522US

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U.S. PATENT DOCUMENTS

Examiner Initials	Cite No	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code (if known)			
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	AB	4,800,159		Mullis et al.	01-24-1989	
	AC	4,965,188		Mullis et al.	10-23-1990	
	AD	5,023,171		Ho	06-11-1991	
	AE	5,176,995		Sninsky et al.	01-05-1993	
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	AG	5,234,824		Mullis	08-10-1993	
	AH	5,502,167		Waldmann	03-26-1996	
	AI	5,556,772		Sorge et al.	09-17-1996	
	AJ	5,714,316		Weiner et al.	02-03-1998	
	AK	5,851,813		Desrosiers	12-22-1998	
	AL	5,858,725		Crowe et al.	01-12-1999	

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09/12/01

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	AM	WO	90/14430		Scripps Clinic & Research Found.	11-29-1990		
	AN	WO	91/06570		Univ. of Melbourne	05-16-1991		
	AO	WO	92/07075		Wellcome Foundation Ltd.	04-30-1992		
	AP	WO	93/02191		Wellcome Foundation Ltd.	02-04-1993		
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INFORMATION DISCLOSURE
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Application Number ~~08/760,062~~ *unassigned*
 Filing Date ~~December 18, 1996~~ *unassigned*
 First Named Inventor **Phillip A. Patten**
 Group Art Unit **1634**
 Examiner Name **Zitomer, S.**
 Attorney Docket Number **02-020500US 02-020522US**

U.S. PATENT DOCUMENTS

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09/12/01

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INFORMATION DISCLOSURE
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First Named Inventor Phillip A. Patten
Group Art Unit 1634
Examiner Name Zitomer, S.
Attorney Docket Number ~~02-02050003~~ *02-020522WS*

U.S. PATENT DOCUMENTS

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09/12/01

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Examiner Initials	Cite No.	Foreign Patent Document Office	Number	Kind Code (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T

Examiner Signature *[Signature]* Date Considered 12/11/03

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INFORMATION DISCLOSURE
STATEMENT BY APPLICANTCOPY FROM PARENT
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Application Number	08/769,062 Unassigned
Filing Date	December 18, 1996 Unassigned
First Named Inventor	Phillip A. Patten
Group Art Unit	1634
Examiner Name	Zitomer, S.
Attorney Docket Number	02-020500US-02-020522US

U.S. PATENT DOCUMENTS

Examiner Initials	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code (if known)			
JP	CV	5,958,672		Short	09-28-1999	
	CW	5,965,408		Short	10-12-1999	

U.S. PTO
09/954692

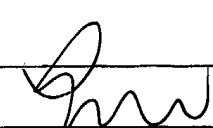
09/12/01

FOREIGN PATENT DOCUMENTS

Examiner Initials	Cite No.	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T
		Office	Number	Kind Code (if known)				

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T

Examiner Signature		Date Considered	12/11/03
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Complete if Known

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

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Application Number	00/769,082 <i>unassigned</i>
Filing Date	December 16, 1996 <i>unassigned</i>
First Named Inventor	Phillip A. Patten
Group Art Unit	1634
Examiner Name	Zitomer, S.
Attorney Docket Number	02-020500US <i>02-020522US</i>

<i>[Signature]</i>	BR	Scharf et al., (1986) Science <u>233</u> :1076-1078
<i>[Signature]</i>	BS	Saiki et al., (1988) Science <u>239</u> :487-491
<i>[Signature]</i>	BT	Saiki et al., (1986) Nature <u>324</u> (13):163-166
<i>[Signature]</i>	BU	Saiki et al., (1985) Science <u>230</u> :1350-1354
<i>[Signature]</i>	BV	Saiki et al., (1988) New Eng J Med <u>319</u> (9):537-541
<i>[Signature]</i>	BW	Cramer et al., (1993) Nucleic Acids Res. <u>21</u> (18):4410
<i>[Signature]</i>	BX	Villareal XC et al., (1991) Anal Biochem. <u>197</u> (2):362-367
<i>[Signature]</i>	BY	Jones et al., (1991) Biotechniques <u>10</u> (1):62-66
<i>[Signature]</i>	BZ	Weissenhorn et al., (1991) Gene <u>106</u> (2):273-277
<i>[Signature]</i>	CA	Majumder et al., (1992) Gene <u>110</u> (1):89-94
<i>[Signature]</i>	CB	Yao et al., (1992) PCR Methods Appl <u>1</u> (3):205-207
<i>[Signature]</i>	CC	Atreya et al (1992) Plant Mol Biol. <u>19</u> (3):517-522
<i>[Signature]</i>	CD	Zoller et al., (1992) Curr Opin Biotechnol. <u>3</u> (4):348-354
<i>[Signature]</i>	CE	Heda et al., (1992) Nucleic Acid Res. <u>20</u> (19):5241-5242
<i>[Signature]</i>	CF	Horton et al., (1993) Methods Enzymol <u>217</u> :270-279
<i>[Signature]</i>	CG	The whys and wherefores of DNA amplification. Biotechnology (NY). 1993 Aug; <u>11</u> (8):940-942
<i>[Signature]</i>	CH	Clackson et al., (1991) Nature <u>352</u> (6336):624-628
<i>[Signature]</i>	CI	Smith et al., (1993) PCR Methods Appl. <u>2</u> (3):253-257
<i>[Signature]</i>	CJ	Weisberg et al., (1993) Biotechniques <u>15</u> (1):68-70, 72-4, 76.
<i>[Signature]</i>	CK	Marks, et al., (1991) J Mol Biol <u>222</u> (3):581-597
<i>[Signature]</i>	CL	Harlow et al., (1994) Methods Mol Biol <u>31</u> :87-96
<i>[Signature]</i>	CM	Yon et al., (1989) Nucleic Acids Res. <u>17</u> (12):4895
<i>[Signature]</i>	CN	Ho et al., (1990) DNA & Prot. Engineer. Tech. 2:50-55
<i>[Signature]</i>	CO	Horton et al., (1990) Biotechniques <u>8</u> (5):528-535
<i>[Signature]</i>	CP	Osuna et al. (1991) Gene. <u>106</u> :7-12
<i>[Signature]</i>	CQ	Dube et al. (1991) Biochemistry <u>30</u> (51):11760-7
<i>[Signature]</i>	CR	Ghosh et al., (1991) Biochem <u>30</u> :11767-74
<i>[Signature]</i>	CS	Paabo et al., (1990) J Biol Chem <u>265</u> (8):4718-4721

Examiner Signature	<i>[Signature]</i>	Date Considered	<i>12/11/07</i>
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<p>Substitute for form 1449A-B/PTO</p> <p>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</p> <p>COPY FROM PARENT (use as many sheets as necessary)</p>	Complete if Known	
	Application Number	08/769,062 <i>unassigned</i>
	Filing Date	December 18, 1996 <i>unassigned</i>
	First Named Inventor	Phillip A. Patten
	Group Art Unit	1634
	Examiner Name	Zitomer, S.
	Attorney Docket Number	02-020500US <i>02-020522US</i>

<i>hw</i>	CT	Sambrook et al., (1989) Molecular cloning, A Laboratory Manual, 2 nd Edition, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York.
<i>j</i>	CU	Opposition by Diversa Corporation filed in the matter of Australian Application 703264 Affymax Technology NV, September 23, 1999.

Examiner Signature	<i>hw</i>	Date Considered	<i>12/11/03</i>
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute for form 1449A-B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT COPY FROM PARENT (use as many sheets as necessary)	Complete if Known	
	Application Number	09/717419 <i>unassigned</i>
	Filing Date	November 18, 2000 <i>unassigned</i>
	First Named Inventor	Phillip A. Patten
	Group Art Unit	1634
	Examiner Name	S. Zitomer
	Attorney Docket Number	02-020520US <i>02-020522US</i>

U.S. PATENT DOCUMENTS						
Examiner Initials	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, lines, Where Relevant Passages or Relevant Figures Appeal
		Number	Kind Code (if known)			
<i>[Signature]</i>	AA	5,427,930		Birkenmeyer et al.	06-27-1995	
<i>[Signature]</i>	AB	5,792,607		Backman et al.	08-11-1998	

J1050 U.S. PTO
09/954692
09/12/01

FOREIGN PATENT DOCUMENTS								
Examiner Initials	Cite No.	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T
		Office	Number	Kind Code (if known)				

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T

Examiner Signature	<i>[Signature]</i>	Date Considered	<i>12/1/07</i>
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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Substitute for form 1449A-B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT COPY FROM PARENT (use as many sheets as necessary)	Complete if Known	
	Application Number	08769,062 09/954 692
	Filing Date	December 18, 1996 109/12/201
	First Named Inventor	Phillip A. Patten
	Group Art Unit	1634
	Examiner Name	Zitomer, S.
Attorney Docket Number		02-020500US 02-02052205

U.S. PATENT DOCUMENTS						
Examiner Initials	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, lines, Where Relevant Passages or Relevant Figures Appeal
		Number	Kind Code (if known)			
[Signature]	AA	4,766,106		Katre et al.	08-23-1988	
	AB	4,795,699		Tabor et al.	01-03-1989	
	AC	4,816,567		Cabilly et al.	03-28-1989	
	AD	4,902,502		Nitecki et al.	02-20-1990	
	AE	5,264,563		Huse	11-23-1993	
	AF	5,314,809		Erlich et al.	05-24-1994	
	AG	5,512,463		Stemmer	04-30-1996	
	AH	5,514,568		Stemmer	05-07-1996	
	AI	5,514,588		Varadaraj	05-07-1996	
	AJ	5,523,388		Huse	06-04-1996	
	AK	5,541,311		Dahlberg et al.	07-30-1996	
	AL	5,547,859		Goodman et al.	08-20-1996	
	AM	5,574,205		Kucheralapati et al.	11-12-1996	
	AN	5,667,974		Birkenmeyer et al.	09-16-1997	
	AO	5,698,426		Huse	12-16-1997	
	AP	5,756,316		Schellenberger	05-26-1998	
	AQ	5,770,434		Huse	06-23-1998	
	AR	5,808,022		Huse	09-15-1998	
	AS	5,824,496		Horwitz et al.	10-20-1998	
	AT	5,830,696		Short	11-03-1998	
	AU	5,843,643		Ratner	12-01-1998	
	AV	5,858,725		Crowe	01-12-1999	
	AW	5,866,363		Pieczenic	02-02-1999	
	AX	5,871,974		Huse	02-16-1999	
	AY	5,877,402		Maliga et al.	03-02-1999	
	AZ	5,885,813		Davis et al.	03-23-1999	
BA	5,928,905		Stemmer et al.	07-27-1999		
Examiner Signature	[Signature]			Date Considered	12/11/03	

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Substitute for form 1449A-B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT COPY FROM PARENT (use as many sheets as necessary)	Complete if Known	
	Application Number	08/03/062 09/15/99 672
	Filing Date	December 16, 1996 09/12/2001
	First Named Inventor	Phillip A. Patten
	Group Art Unit	1634
	Examiner Name	Zitomer, S.
Attorney Docket Number		02-020589US 02-020524US

BB	5,955,358		Huse	09-21-1999	
BC	5,965,415		Radman et al.	10-12-1999	
BD	6,001,574		Short	12-14-1999	
BE	6,004,788		Short	12-21-1999	
BF	6,015,694		Dubenskey et al.	01-18-2000	
BG	6,030,779		Short	02-29-2000	
BH	6,051,049		Hansen et al.	04-18-2000	
BI	6,054,267		Short	04-25-2000	
BJ	6,057,103		Short	05-02-2000	
BK	6,071,889		Weiss et al.	06-06-2000	
BL	6,074,853		Pati et al.	06-13-2000	
BM	6,087,177		Wohlstadter	07-11-2000	
BN	6,093,873		Chambon et al.	07-25-2000	
BO	6,096,548		Stemmer	08-01-2000	
BP	6,114,115		Wagner, Jr.	09-05-2000	
BQ	6,117,679		Stemmer	09-12-2000	
BR	6,132,970		Stemmer	10-17-2000	
BS	6,153,410		Arnold et al.	11-28-2000	
BT	6,159,687		Vind	12-12-2000	
BU	6,171,820	B1	Short	01-09-2001	
BV	6,174,673	B1	Short et al.	01-16-2001	
BW	6,168,919	B1	Short	01-02-2001	
BX	6,177,263	B1	Arnold et al.	01-23-2001	
BY	5,795,747		Henco	08-18-1998	

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Examiner Initials	Cite No.	Foreign Patent Document		Kind Code (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T
		Office	Number					
	BZ	EP	0 544 809	B1	Ixsys, Inc.	12-16-1998		
	CA	EP	0 563 296	B1	Ixsys, Inc.	03-17-1999		
Examiner Signature	<i>[Signature]</i>				Date Considered	12/11/03		

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

(Modified) PTO/SB/D8A-B (10-96)
Approved for use through 10/31/99. OMB 0651-0031

Substitute for form 1449A-B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT COPY FROM PARENT (use as many sheets as necessary)	Complete if Known	
	Application Number	06769,062 09/957,672
	Filing Date	December 18, 1996 07/12/2001
	First Named Inventor	Phillip A. Patten
	Group Art Unit	1634
	Examiner Name	Zitomer, S.
Attorney Docket Number		02-02050005 02-02052265

CB	EP	0 552 266	B1	The Wellcome Foundation LTD.	01-19-2000		
CC	EP	0 397 463	A2	Berlex Laboratories	11-14-1990		
CD	EP	0 397 463	A3	Berlex Laboratories	11-14-1990		
CE	WO	90/14424	A1	Scripps Clinic and Research Foundation	11-29-1990		
CF	WO	92/06176	A1	IXSYS, Inc	04-16-1992		
CG	WO	92/18645	A1	Henco	10-29-1992		
CH	WO	93/01282	A1	Berlex Laboratories, Inc.	01-21-1993		
CI	WO	93/18175	A1	Life Technologies, Inc.	09-16-1993		
CJ	WO	93/19172	A1	Cambridge Antibody Technology LTD.	09-30-1993		
CK	WO	94/11496	A1	IXSYS, Inc	05-26-1994		
CL	WO	97/46670	A1	Massachusetts Institute of Technology	12-11-1997		
CM	WO	99/29902	A1	California Institute of Technology	06-17-1999		

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T
	CN	ADEY ET AL. "Preparation of second-generation phage libraries." <i>Proteins</i> 227-291. (1996)	
	CO	Berger et al. "Prospective: Expanding the Potential of Restriction Endonucleases: Use of Hapaxotermistic Enzymes." <i>Anal Biochemistry</i> 222:1-8 (1994)	
	CP	Biotransformations <i>Amer Soc. Abstract</i> no.11-21&11-25 Pg.26 (July 1989)	
	CQ	CARTER "Improved Oligonucleotide-Directed Mutagenesis Using M13 Vectors." <i>Methods of Enzymology</i> 154:382-403 (1985)	
	CR	COLLET ET AL. "A binary plasmid system for shuffling combinational antibody libraries." <i>Proc. Natl. Acad. Sci. USA</i> 89(21):L10026-10030 (1992)	
	CS	DANGL ET AL. "Rapid Isolation of Cloned Isotype Switch Variants Using Fluorescent Activated Cell Sorting." <i>Cytometry</i> 2(6):395-401 (1982)	
	CT	DIERICK ET AL. "Incorporation of dITP of 7-deaza dGTP during PCR improves sequencing of the product." <i>Nuc. Acid Res.</i> 21(18):4427-4428 (1993)	
Examiner Signature	Date Considered		12/11/07

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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Approved for use through 10/31/99. OMB 0651-0031

Substitute for form 1449A-B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use separate sheets as necessary)	Complete if Known	
	Application Number	08/769,062 09/954 697
	Filing Date	December 18, 1996 09/12/2001
	First Named Inventor	Phillip A. Patten
	Group Art Unit	1634
	Examiner Name	Zitomer, S.
	Attorney Docket Number	02-020500US 02 - 02-052205

COPY FROM PARENT

CU	FULLEN ET AL. "Genetic Algorithms and Recursive Ensemble Mutagenesis in Protein Engineering." Complex. Int. 94, from website (1992)
CV	HEDA ET AL. "A simple in vitro site directed mutagenesis of concatamerized cDNA by inverse polymerase chain reaction." <i>Nuc. Acids Res.</i> 20(19):5241-5242 (1992)
CW	HIGUCHI ET AL. "A general method of in vitro preparation and specific mutagenesis of DNA fragments study of protein and DNA interactions." <i>Nuc. Acids Res.</i> 16(15):7351-7367 (1988)
CX	HODGSON "The Whys and Wherefores of DNA Amplification." <i>Biotechnology</i> 11(8):940-942 (1993)
CY	Kang et al. "Antibody redesigned by chain shuffling from random combinatorial immunoglobulin libraries." <i>Proc. Natl. Acad. Sci. USA</i> 88(24):11120-11123 (1991)
CZ	KLUG ET AL. "Creating chimeric molecules by PCR directed homologous DNA recombination." <i>Nuc. Acids. Res.</i> 19(10):2793 (1991)
DA	KOMANO ET AL. "Distribution of Shufflon among IncI Plasmids." <i>J. Bacteriology</i> 169(11):5317-5319. (1987)
DB	KOMANO ET AL. "Physical and Genetic Analysis of IncI2 Plasmid R721: Evidence for the Presence of Shufflon." <i>Plasmid</i> 23:248-251. (1991)
DC	KRAMER & FRITZ "Oligonucleotide-Directed Construction of Mutations via Gapped Duplex DNA." <i>Methods of Enzymology</i> 154:350-367 (1978)
DD	Kunkel "Rapid and Efficient Site-Specific Mutagenesis without Phenotypic Selection." <i>Methods in Enzymology</i> 154:367-382 (1987)
DE	KUNKEL "Rapid and efficient site-specific mutagenesis without phenotype selection." <i>Proc. Natl. Acad. Sci. USA</i> 82:488-492 (1985)
DF	LOWNAM ET AL. "Affinity Maturation of Human Growth Hormone by Monovalent Phage Display." <i>J. Mol. Biol.</i> 234:654-578 (1993)
DG	MAJUMDER "Ligation-free gene synthesis by PCR: synthesis and mutagenesis at multiple loci of a chimeric gene encoding OmpA signal peptide and hirudin." <i>Gene</i> 110(1):89-94 (1992)
DH	MERYHANS ET AL. "DNA recombination during PCR." <i>Nuc. Acids. Res.</i> 18(7):1687-1691 (1990)
DI	MICHAEL "Thermostable Ligase-Mediated Incorporation of Mutagenic Oligonucleotides During PCR Amplification." <i>Meth. In Mol Biol.</i> 67:189-195 (1997)
DJ	NER ET AL. "Laboratory Methods." <i>DNA</i> 7:127-134 (1988)
DK	OLSEN ET AL. "Hybrid Baccillus (1-3,1-4)- β -glucanases: engineering thermostable enzymes by construction of hybrid genes." <i>Mol. Gen. Genet</i> 225(2):177-185 (1987)
DL	REIKOFSKI & TAO "Polymerase Chain Reaction (PCR) Techniques for Site-directed Mutagenesis." <i>Biotech Adv.</i> 10:535-547(1992)
DM	ROBLES ET AL. "Hydropathy and Molar Volume Constraints on Combinatorial Mutants of the Photosynthetic Reaction Center." <i>J. Mol. Biol.</i> , 232:242-252 (1993)
DN	ROUWENDAL ET AL. "Simultaneous Mutagenesis of Multiple Sites: Application of the Ligase Chain Reaction Using PCR Products Instead of Oligonucleotides." <i>Biotechniques</i> 15(1):68-70, 72-74, 76 (1993)
DO	SANDHU ET AL. "Dual Asymmetric PCR: One-Step Construction of Synthetic Genes." <i>Biotechniques</i> 12(01):14-16 (1992)

Examiner Signature		Date Considered	12/11/03
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Approved for use through 10/31/99, OMB 0651-0031

Substitute for form 1449A-B/PTO INFORMATION DISCLOSURE STATEMENT COPY FROM PARENT (use as many sheets as necessary)	Complete if Known	
	Application Number	08/09,002 09/25/99,692
	Filing Date	December 18, 1996 02/12/2001
	First Named Inventor	Phillip A. Patten
	Group Art Unit	1634
	Examiner Name	Zitomer, S.
Attorney Docket Number		02-02050005 02-2052245

DP	SHI ET AL. "Rapid PCR Construction of a Gene Containing Lym-1 Antibody Variable Regions." <i>PCS Meth. & Appl.</i> 3:46-52 (1993)	
DQ	SHULDINER ET AL. "Hybrid DNA artifact from PCR of closely related target sequences." <i>Nus. Acids Res.</i> 17(11):4409 (1989)	
DR	SMITH ET AL. "Localized sex in Bacteria." <i>Nature</i> 349:29-31 (1991)	
DS	Statutory Declaration by Mae Li Gan No. 703264	
DT	Statutory Declaration by Ngarie Petit-Young No. 703264	
DU	Statutory Declaration by Ruth Bird No. 703264	
DV	STEMMER ET AL. "A 20-Minute Ethidium Bromide High-salt Extraction Protocol for Plasmid DNA." <i>Biotechniques</i> 10(6):726 (1991)	
DW	STEMMER ET AL. "Enzymatic Inverse PCR- A Restriction Site Independent, Single-Fragment Method for High-Efficiency, Site-Directed Mutagenesis." <i>Biotechniques</i> 13(2):214. (1992)	
DX	STEMMER ET AL. (1991) R342 "Expression of Antibody By Fragments Specific for a Heavy Metal Chelate (Indium EDTA) in E-Coli." <i>J. Cell Biochem</i> 217	
DY	STEMMER ET AL. "Increased Antibody Expression for Escherichia-Coli Through Wobble-Base Library Mutagenesis by Enzymatic Inverse PCR." <i>Gene</i> 123(1):1-7. (1993)	
DZ	WU ET AL. "Allele-specific enzymatic amplification of β -globin genomic DNA for diagnosis of sickle cell anemia." <i>Proc. Natl. Acad. Sci</i> Vol 86:2757-2760. (1999)	
EA	ZOLLER & SMITH "Oligonucleotide-Directed Mutagenesis: A Simple Method using Two Oligonucleotide Primers and a Single-Stranded DNA Template." <i>Methods in Enzymology</i> 154:329-347 (1987)	

Examiner Signature		Date Considered	12/11/03
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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	Application Number	08769,062 09/954,692
	Filing Date	December 16, 1996 09/12/2001
	First Named Inventor	Phillip A. Patten
	Group Art Unit	1634
	Examiner Name	Zltomer, S.
Attorney Docket Number		02-02050005 02-02052245

U.S. PATENT DOCUMENTS						
Examiner Initials	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code (if known)			
<i>mw</i>	AA	5,665,859		Wallach et al.	09-09-1997	
	AB	5,741,694		Hasrtup et al.	04-21-1998	
	AC	5,750,373		Garrard et al.	05-12-1998	
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	AE	5,792,607		Backman et al.	08-11-1998	

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		Office	Number	Kind Code (if known)				

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS					
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.			T

Examiner Signature	<i>mw</i>	Date Considered	12/11/03
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FORM PTO-1449 (Modified)

Attorney Docket No.: 180972-015205 Application No.: 08-621-57

LIST OF PATENTS AND PUBLICATIONS FOR
APPLICANT'S INFORMATION DISCLOSURE
STATEMENT (Use several sheets if necessary)

Applicant: Stemmer et al.

unassigned

Filing Date: March 25, 1996

Group: 1634

Reference Designation

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Page: 1

Examiner Initial	Document No.	Date	Name	Class	Sub-class	Filing Date
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AI	Balint et al., "Antibody Engineering By Parsimonious Mutagenesis", <u>Gene</u> , 137(1):109-118 (1993)
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AU	Stemmer et al., "Single-Step Assembly Of A Gene And Entire Plasmid From Large Numbers Of Oligodeoxyribonucleotides", <u>Gene</u> , 164(1):49-53 (1995) (previously submitted)
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AW	Stemmer, "Sexual PCR and Assembly PCR" <u>Encyclopedia Mol. Biol.</u> , VCH Publishers, New York, pp. 447-457 (1996)
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FORM PTO-1449 (Modified)		Attorney Docket No.: 4809-02-020220	Application No.: 08/621,857
LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)		Applicant: Stemmer et al.	<i>masp</i>
		Filing Date: March 25, 1996	Group: 1634
<i>ms</i> AZ	Zhang et al., "Directed Evolution Of A Fucosidase From A Galactosidase By DNA Shuffling And Screening". <i>Proc Natl. Acad. Sci. USA</i> , 94(9):4504-4509 (1997)		
<i>ms</i> BA	Zhao et al., "Molecular Evolution by Staggered Extension Process (StEP) In Vitro Recombination", <i>Nature Biotech.</i> , 16:258-261 (1998)		
EXAMINER	<i>ms</i>	DATE CONSIDERED	<i>12/4/03</i>

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